Arguments/Remarks

1. Applicant has amended each of the independent claims in the application by incorporating the limitations of the single claim that depended therefrom. Those dependent claims have been cancelled. More particularly, independent claim 18 has been amended by the incorporation of the limitations of claim 23, independent claim 24 incorporated the limitations of claim 28, and claim 29 now contains the limitations of claim 33.

Claim 18 was rejected under the provisions of 35 USC 103(a) as being anticipated by Carlson *et al.* ("Carlson") in view of Schunck *et al.* ("Schunck"). Claim 18 has been amended to include the limitations of dependent Claim 23. Insofar as this rejection might be applied to the claims now in the application, it is respectfully traversed.

Carlson discloses a method of cooling an axle assembly of a work vehicle, wherein the axle assembly includes an axle housing (12) that contains a chamber (26) filled with fluid that partially submerges differential gearset (36). (Carlson Col. 3 lines 34-48). Chamber 26 includes a conduit assembly (42) which contains outflow/inflow tubes (50) and (52) that open into receptacles (94) and (96). (Carlson Col. 3 lines 49-67).

Schunck discloses a gear drive housing (14) where heat exchange tubes (20) are disposed in the lower half of gear drive housing (14), the heat exchange tubes (20) submerged beneath the surface of lubricating fluid and entirely underneath the shafts (10 and 11). (Schunck Col. 2 lines 43-46).

However, Carlson only discloses **one** conduit assembly (42) in a location about a majority of the periphery of differential gearset (36). (Carlson Figs. 2-3; Col. 4 lines 39-48). The present invention discloses an axle assembly that includes a **second** cooling coil disposed in a left and right axle housing. (Det. Desc. of the Pref. Embod. Pgs. 7-8; Figs. 3-4). Although Schunck teaches that any number of heat exchange tubes (20) may be used (Schunck Col. 3 lines 21-23), neither Schunck or Carlson teach a second cooling coil disposed in a left and right axle housing like the present invention. (Det. Desc. of the Pref. Embod. Pgs.

7-8; Figs. 3-4). In addition, neither Carlson nor Schunck disclose removing heat from the lubricating fluid by placing the lubricating fluid in contact with the outer surface of the second coil as in the present invention. (Det. Desc. of the Pref. Embod. Pg. 8 lines 10-14). One of ordinary skill in the art would not learn all of the elements of the present invention from these two references. Additionally, the cited art does not even remotely suggest such structure.

2. Independent claim 18 was further rejected under the provisions of 35 USC 102(a) as being anticipated by Baedke *et al.* ("Baedke") in view of Carlson *et al.* ("Carlson") and further in view of Schunck *et al.* ("Schunck"). Claim 18 has been amended to include the limitations of dependent Claim 23. Insofar as this rejection might be applied to the claims now in the application, it is respectfully traversed.

Baedke discloses a method of cooling an axle assembly of a work vehicle where the axle assembly includes an axle housing (12) that substantially surrounds axle shaft (20). (Baedke Col. 2 lines 61-68). Located within axle housing (12) is a differential mechanism that includes a ring gear (42). (Baedke Col. 3 lines 13-19). The method disclosed in Baedke uses the rotational action of ring gear (42) to move lubricant from a reservoir at the bottom of axle housing (12) to a chamber located at an elevation relatively high on the differential housing. (Baedke Col. 2 lines 1-5).

Carlson discloses a method of cooling an axle assembly of a work vehicle, wherein the axle assembly includes an axle housing (12) that contains a chamber (26) filled with fluid that partially submerges differential gearset (36). (Carlson Col. 3 lines 34-48). Chamber 26 includes a conduit assembly (42) which contains outflow/inflow tubes (50) and (52) that open into receptacles (94) and (96). (Carlson Col. 3 lines 49-67).

Schunck discloses a gear drive housing (14) where heat exchange tubes (20) are disposed in the lower half of gear drive housing (14), the heat exchange tubes (20) submerged beneath the surface of lubricating fluid and entirely underneath the shafts (10 and 11). (Schunck Col. 2 lines 43-46).

Baedke fails to disclose a cooling coil at all and Carlson only discloses **one** conduit assembly (42) in a location about a majority of the periphery of differential gearset (36). (Carlson Figs. 2-3; Col. 4 lines 39-48). The present invention discloses an axle assembly that includes a **second** cooling coil disposed in a left and right axle housing. (Det. Desc. of the Pref. Embod. Pgs. 7-8; Figs. 3-4). Although Schunck teaches that any number of heat exchange tubes (20) may be used (Schunck Col. 3 lines 21-23), neither Schunck, Baedke nor Carlson teach a second cooling coil disposed in a left and right axle housing like the present invention. (Det. Desc. of the Pref. Embod. Pgs. 7-8; Figs. 3-4). In addition, neither Baedke, Carlson or Schunck disclose removing heat from the lubricating fluid by placing the lubricating fluid in contact with the outer surface of the second coil as in the present invention. (Det. Desc. of the Pref. Embod. Pg. 8 lines 10-14). One of ordinary skill in the art would not learn all of the elements of the present invention from these three references, i.e., the cited combination neither teaches nor suggests the claimed structure.

3. Claim 24 was rejected under the provisions of 35 USC 103(a) as being anticipated by Baedke *et al.* ("Baedke") in view of Carlson *et al.* ("Carlson") and further in view of Schunck *et al.* ("Schunck"). Claim 24 has been amended to include the limitations of dependent Claim 28. Insofar as this rejection might be applied to the claims now in the application, it is respectfully traversed.

Baedke discloses a method of cooling an axle assembly of a work vehicle where the axle assembly includes an axle housing (12) that substantially surrounds axle shaft (20). (Baedke Col. 2 lines 61-68). Located within axle housing (12) is a differential mechanism that includes a ring gear (42). (Baedke Col. 3 lines 13-19). The method disclosed in Baedke uses the rotational action of ring gear (42) to move lubricant from a reservoir at the bottom of axle housing (12) to a chamber located at an elevation relatively high on the differential housing. (Baedke Col. 2 lines 1-5).

Carlson discloses a method of cooling an axle assembly of a work vehicle, wherein the axle assembly includes an axle housing (12) that contains a chamber

(26) filled with fluid that partially submerges differential gearset (36). (Carlson Col. 3 lines 34-48). Chamber 26 includes a conduit assembly (42) which contains outflow/inflow tubes (50) and (52) that open into receptacles (94) and (96). (Carlson Col. 3 lines 49-67).

Schunck discloses a gear drive housing (14) where heat exchange tubes (20) are disposed in the lower half of gear drive housing (14), the heat exchange tubes (20) submerged beneath the surface of lubricating fluid and entirely underneath the shafts (10 and 11). (Schunck Col. 2 lines 43-46).

Baedke fails to disclose a cooling coil at all and Carlson only discloses **one** conduit assembly (42) in a location about a majority of the periphery of differential gearset (36). (Carlson Figs. 2-3; Col. 4 lines 39-48). The present invention discloses an axle assembly that includes a **second** cooling coil disposed in a left and right axle housing. (Det. Desc. of the Pref. Embod. Pgs. 7-8; Figs. 3-4). Although Schunck teaches that any number of heat exchange tubes (20) may be used (Schunck Col. 3 lines 21-23), neither Schunck, Baedke or Carlson teach a second cooling coil disposed in a left and right axle housing like the present invention. (Det. Desc. of the Pref. Embod. Pgs. 7-8; Figs. 3-4). In addition, neither Baedke, Carlson or Schunck disclose removing heat from the lubricating fluid by placing the lubricating fluid in contact with the outer surface of the second coil as in the present invention. (Det. Desc. of the Pref. Embod. Pg. 8 lines 10-14). One of ordinary skill in the art would not be lead to all of the elements of the present invention, in the structure claimed, from these three references.

4. Claim 29 was rejected under the provisions of 35 USC 103(a) as being anticipated by Carlson *et al.* ("Carlson") in view of Schunck *et al.* ("Schunck"). Claim 29 has been amended to include the limitations of dependent Claim 33. Insofar as this rejection might be applied to the claims now in the application, it is respectfully traversed.

Carlson discloses a method of cooling an axle assembly of a work vehicle, wherein the axle assembly includes an axle housing (12) that contains a chamber (26) filled with fluid that partially submerges differential gearset (36). (Carlson Col.

3 lines 34-48). Chamber 26 includes a conduit assembly (42) which contains outflow/inflow tubes (50) and (52) that open into receptacles (94) and (96). (Carlson Col. 3 lines 49-67).

Schunck discloses a gear drive housing (14) where heat exchange tubes (20) are disposed in the lower half of gear drive housing (14), the heat exchange tubes (20) submerged beneath the surface of lubricating fluid and entirely underneath the shafts (10 and 11). (Schunck Col. 2 lines 43-46).

However, Carlson only discloses **one** conduit assembly (42) in a location about a majority of the periphery of differential gearset (36). (Carlson Figs. 2-3; Col. 4 lines 39-48). The present invention discloses an axle assembly that includes a **second** cooling coil disposed in a left and right axle housing. (Det. Desc. of the Pref. Embod. Pgs. 7-8; Figs. 3-4). Although Schunck teaches that any number of heat exchange tubes (20) may be used (Schunck Col. 3 lines 21-23), neither Schunck nor Carlson teach a second cooling coil disposed in a left and right axle housing as described in the rejected claims. (Det. Desc. of the Pref. Embod. Pgs. 7-8; Figs. 3-4). In addition, neither Carlson nor Schunck disclose removing heat from the lubricating fluid by placing the lubricating fluid in contact with the outer surface of the second coil as in the present invention. (Det. Desc. of the Pref. Embod. Pg. 8 lines 10-14). One of ordinary skill in the art would not learn all of the elements of the present invention, in the structure claimed, from these two references.

5. Regarding all rejections made in the Office Action, it is not enough that the Examiner seemingly locate the various components set forth in the claims. A section 103 rejection can only be maintained if there is some suggestion or clearly obvious reason for making the modifications necessary for the cited art to be combined as recited in the claims. Applicant sees no such support in the rejections.

6. In summary, claims 23, 28 and 33 have been canceled, claims 18, 24 and 29 have been amended, and claims 18, 24 and 29 remain in the application.

Applicant believes that the claims as herein presented are allowable, and respectfully requests that the rejections be withdrawn and all remaining claims be allowed. No new matter has been added.

Pursuant to currently recommended Patent Office practice, the Examiner is expressly authorized to call Applicant's attorney, collect, at New Holland, Pennsylvania, if in his judgment disposition of this application could be expedited or if he considers the application ready for final disposition by other than allowance.

Respectfully submitted,

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John B. Mitchell
Registration No. 26,485
Customer No. 25542
Patent Attorney for CNH America LLC
Phone (717) 314-2844